

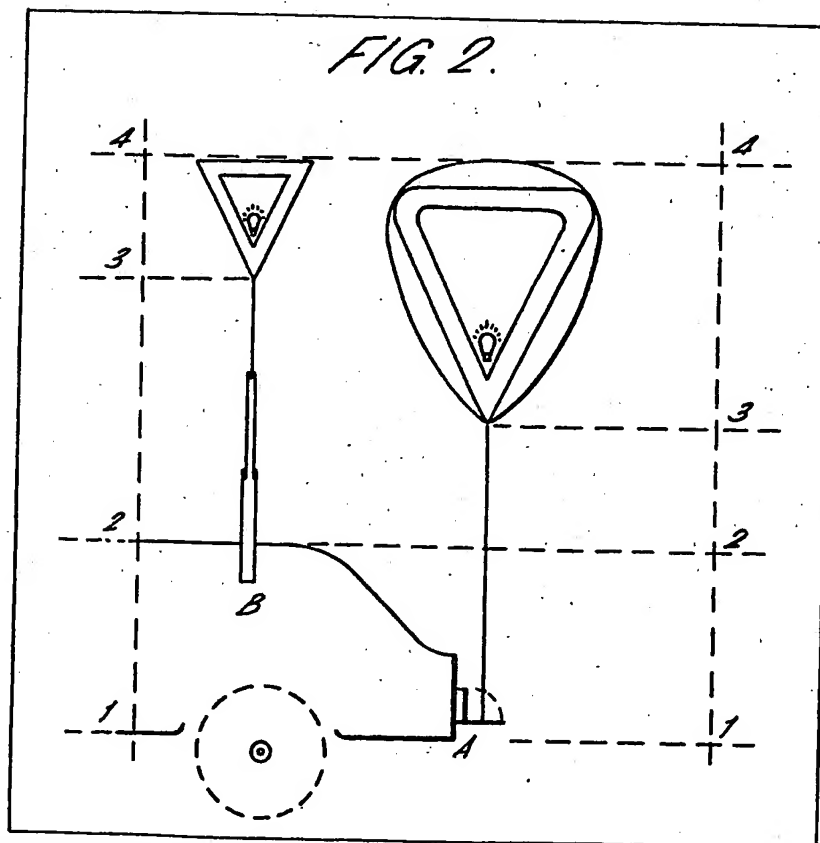
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(54) Highway and railway warning device

(57) A balloon carries a light bulb and is coloured with a warning sign and is attached by a tether to a vehicle. The balloon is carried in a deflated state in a container on the vehicle. When the vehicle is causing a hazard, for example as a result of a breakdown,

the driver may operate a switch, lever or button within the vehicle which causes a lid of the container to open and the balloon to inflate so that it rises. Electricity is supplied to the light bulb by the tether and the light bulb flashes. In an alternative embodiment, a flashing light bulb and warning sign are mounted on a telescopic rod arrangement.



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FIG. 1.

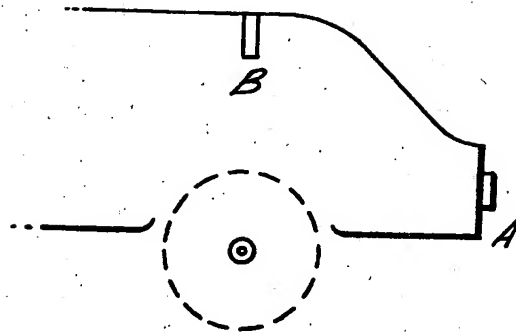
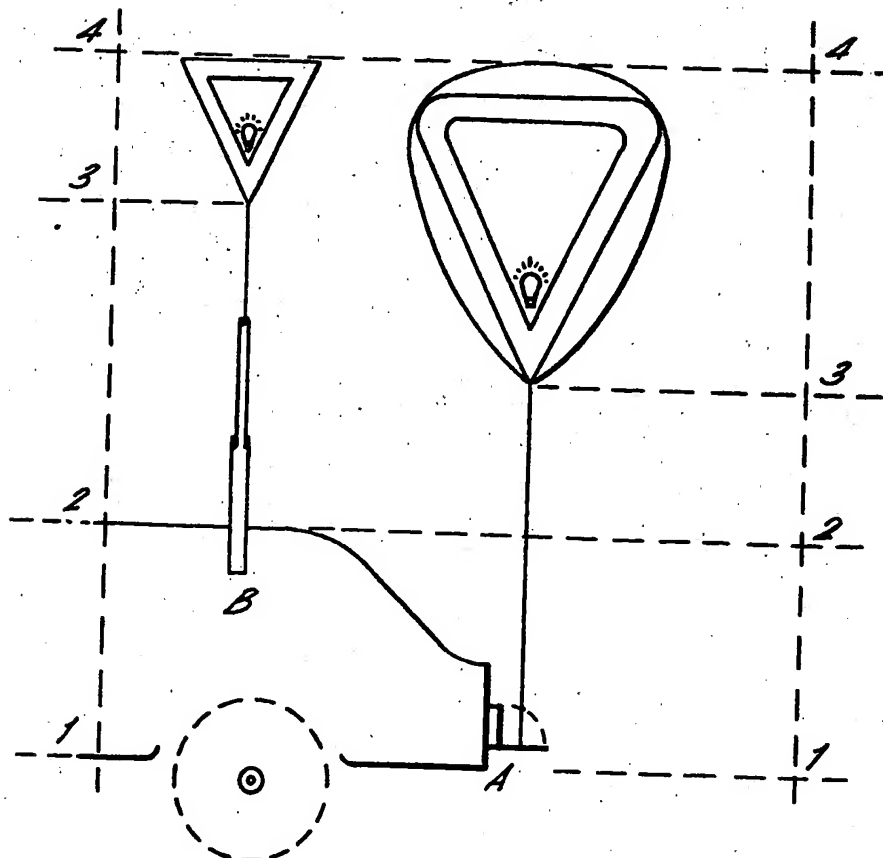


FIG. 2.



SPECIFICATION

Highway and railway warning device

This invention relates to devices for signalling danger on the highway or railway, especially for the purpose of reducing the risk of a vehicle which is stopped on the highway or railway, possibly as a result of an emergency, from being struck in the rear by vehicles following it.

The drivers of vehicles approaching at full speed a vehicle which has, for example, broken down may have no idea of the imminent danger; they may be unaware that the highway in front of them is obstructed by a stopped vehicle. When they realize the danger it may be too late, and as the distance between them and the stopped vehicle, or the vehicle immediately preceding them, may be too short to stop in, the result can be a violent collision, and very often a horrifying pile up in which further oncoming vehicles successively crash into the one immediately in front of them, frequently several minutes or more after the first collision has occurred, particularly in the dark of night.

Most of these accidents caused by a vehicle which has stopped in an emergency on the highway, and the great majority of pile ups, could be avoided with proper use of devices according to the present invention.

The overhead danger signal for vehicles to which this invention relates may comprise a switch, lever or button installed within reach of the driver on the instrument panel of the vehicle; activation of this switch or control connects it electrically with a housing or container which can be located in one of several places in the vehicle.

The housing or container (A) may contain, inter alia, the danger signal, a receptacle for harmless gas, and components and conductors for realizing the functions, among others, of opening the lid of the housing to the horizontal position and opening the valve of the gas recipient to permit the gas to inflate the overhead danger signal. As the overhead danger signal inflated with gas is lighter than air, it rises rapidly to the height permitted by the cable by means of which the signal is attached to the lid of the housing, which cable also supplies current to the flashing light contained inside the overhead danger signal.

The housing or container (B) may alternatively contain, inter alia, the danger signal with its inner flashing light, components, conductors and a telescopic aerial which, when the switch is activated by the driver of the vehicle, automatically raises the overhead danger signal to the desired or most suitable height above the vehicle, depending upon the type of vehicle in question.

The overhead danger signal itself can be made of a variety of materials, and its shape can be that of a pyramid, a sphere, a teardrop or any other form; as a symbol representing danger, it may carry illustrations or one or more triangular designs of different colour. According to the Highway Code, danger signs are formed by a red triangle

upon a white background; since in the overhead danger signal for vehicles the colour must easily be seen at great distances and particularly in the dark of night is red, the overhead danger signal can have a red background with the superimposed triangle or triangles in white, although of course the reverse can be used or any other combination of colours.

The overhead danger signal for vehicles can be elevated either mechanically or by lighter-than-air gas to different heights above the top of the vehicle so equipped, be this a passenger car, a truck or lorry, a railway car or any other class of vehicle. With the overhead danger signal at the ideal height for the particular vehicle, the interior flashing light and with an angle of vision of 360°, the overhead danger signal for vehicles is visible from all directions and from a distance of several hundred metres.

Each vehicle can be equipped with one or more overhead danger signals, which can be of different sizes and forms for variable positioning and placement on the vehicle.

To facilitate more detailed explanation and better understanding of the described signal, this descriptive specification is accompanied by a sheet of drawings in which two practical realizations of the overhead danger signal for vehicles are represented, and which are illustrated as only an informative and non-restrictive example of the scope of this invention.

In the drawings, Figure 1 is a diagrammatic representation of two housings or containers (A) and (B) located in different places on the vehicle, each containing a danger signal for vehicles.

The housing or container (A) opens automatically by means of the switch (not shown in the drawing) which activates the electrical components (not shown), which in turn open the lid of the housing and allow passage of the gas, so that the overhead danger signal for vehicles rises above the vehicle.

The housing or container (B) also opens automatically by means of the switch (not shown in the drawing) which activates the electric components (not shown), which in turn automatically operate the aerial or any other like apparatus which elevates the overhead danger signal for vehicles to the ideal height above the vehicle, depending upon its type.

Figure 2 illustrates two overhead danger signals for vehicles in positions which clearly indicate the existing danger.

In position (A) the lid of the container —1— lies in a horizontal position, and from its rear end extends the cable to which the overhead danger signal is fastened. The height between points —1— and —2— corresponds to the height of the vehicle; the distance or height between points —2— and —3— corresponds to the distance between the top of the vehicle and the overhead danger signal; and the distance between points —3— and —4— corresponds to the height of the overhead danger signal for vehicles.

In position (B), point —2— corresponds to the

top of the vehicle; the distance between points —2— and —3— corresponds to the height of the aerial or of any other like apparatus, and the distance between points —3— and —4— corresponds to the height of the overhead danger signal for vehicles.

As can be readily observed, the described overhead signal for vehicles if of simple construction, it is operated by merely flipping a switch, its installation in the vehicle does not cause any difficulty, and yet the safety it offers the vehicle equipped with it and its occupants is incalculable. At the very instant he detects danger ahead, the driver of the vehicle flips the switch and in a few seconds, even before he has time to stop and alight from the vehicle, the overhead danger signal for vehicles is already warning the drivers of vehicles approaching at full speed from behind of the existing danger.

The overhead danger signal for vehicles can prevent most of the accidents involving a vehicle stopped on the highway, and what is more important can prevent the great majority of pile ups which owing to the lack of proper signalling frequently involve a large number of vehicles. When the highway is obstructed, arriving vehicles form a line one behind the other, and their respective overhead danger signals form all together a danger signal of such magnitude that it is practically impossible for subsequent collisions to occur, since the overhead danger signals of vehicles in line are visible in an angle of 360 degrees and from a distance of several hundred metres.

The overhead danger signal remains constantly visible at the ideal height above the vehicle, without being at all effected by the wind or other atmospheric agents. The overhead signal for vehicles (A) which is attached to the vehicle by a cable, with application of an aerial or any other self-adhesive apparatus of varying height according to the size of the vehicle, can be situated, elevated and turned in that part of the vehicle where it is most visible at that moment; the overhead danger signal for vehicles (B) is not directly affected by atmospheric agents, since the connection between the vehicle and the overhead danger signal for vehicles is rigid.

CLAIMS

1. Overhead danger signal for vehicles, consisting of a housing or container the interior of which contains a danger signal, electric components and the elements necessary to raise the overhead danger signal to the ideal height above the top of the vehicle depending upon its type, which said overhead danger signal for vehicles can be elevated by means of gas, an aerial or any other suitable means and contains a flashing light in its interior, and which said overhead signal for vehicles, one or more of which can be installed in a vehicle, can be of varying sizes and shapes and be made of different materials, and can occupy different positions both as to form and to placement in the vehicle, the overhead danger signal itself containing one or more representations of triangles in different colours as a symbol of danger.
2. A highway or railway warning device comprising a balloon having a tether and carrying a light source, and means for energizing the light source.
3. A device as claimed in claim 2, wherein the light source is electrical and the tether comprises an electrical cable for supplying electricity to the light source.
4. A device as claimed in claim 2 or 3, further comprising means for attaching the end of the tether which is remote from the balloon to a vehicle.
5. A device as claimed in claim 4, further comprising a housing for mounting on a vehicle and adapted to house the balloon, and remotely operable means for releasing the balloon from the housing.
6. A device as claimed in claim 5, wherein the housing is adapted to house the balloon in a deflated state, and further comprising means for inflating the balloon with gas at or before the time of release from the housing to render the balloon buoyant.
7. A highway or railway warning device substantially as hereinbefore described with reference to and as illustrated in the accompanying drawings.
8. A vehicle fitted with a device as claimed in any preceding claim.